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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/764,042	01/16/2001	David H. Davies	M-998US	5686

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EXAMINER
ANGEBRANNDT, MARTIN J

ART UNIT	PAPER NUMBER
1756	

DATE MAILED: 09/03/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/764,042	DAVIES ET AL.	
	Examiner	Art Unit	
	Martin J Angebranndt	1756	

-- The MAILING DATE of this communication appears n the c ver sheet with the c rrespondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *07 April 2003* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-26 and 30-35* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-26 and 30-35* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

1. The response provided by the applicant has been read and given careful consideration. Responses o the arguments offered by the applicant are presented after the first rejection to which they are directed. Rejection of the previous office action, not appearing below are withdrawn on the basis of the arguments and amendment of the applicant.

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 1-26 and 30-35 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The applicant does not have a basis for the optical coupling layer being "substantially less" in thickness than the thickness of the first transparent layer. The applicant has pointed to figure 4, which is viewed as merely illustrative and not to scale. The applicant does have a basis for the layer being "about 80 nm thick" (page8/lines 2) or an inorganic dielectric (page7/lines 25-9). The applicant has also pointed to the disclosure of the prior art within the instant specification. The examiner notes that the 500 and 600 micron thicknesses are much greater than the 100 microns of Takeda et al. '609 and it is not clear if the thinner layers of Takeda et al. '609 would suffer from the same problems attributed to the thicker layers disclosed it he instant specification with respect to the prior art. The examiner finds no basis for the language essentially limiting the thickness of the optical coupling layer to much less than 15 microns and

also holds that the specification lacks any teaching as to what this range thickness are bounded by such language.

The examiner holds that the language described above is new matter and must be removed from the claims.

The language describing the first optical coupling layer as the top or outermost layer is acceptable as this is held to be the protective coating (38) which is described as a protective layer which couples the surrounding environment to the metal/alloy layer (31)

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1-10,12-26,30 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takeda et al. '609, in view of Holster et al. '553.

Takeda et al. '609 teaches with respect to figures 13, a central substrate with information embossed on both sides, the formation of reflective films (46), a light curing resin which is cured in contact with the reflective layers and other mold surfaces, the deposition of semitransparent films (45) and the coating of these films with a protective layer. The semireflective layer is silicon nitride. The use of this with other recording layer types is disclosed. (7/9-15) The thickness of the internal substrate is 0.3 mm or 0.8 mm. (4/4-9 and 5/60-61). The protective and intermediate layers are 0.1 mm thick and UV curable. (5/24-34 and 4/40-50). The use of depth of focus adjustment is disclosed with respect to figure 13 and 18. The use of evaporative deposition and sputtering is disclosed. (5/11-17)

Holster et al. '553 teaches the use of dielectric films or thin 10-20 nm thicknesses of Au, Ag, Ni, Al or the like for semitransmissive films (4) (7/56-68) teaches a protective layer between the reflective layer and the spacer. The spacer layer is illustrated to be much thicker than the protective lacquer (56 in figure 5)

It would have been obvious to one skilled in the art to modify the invention of Takeda et al. '609 by replacing the semitransparent silicon nitride dielectric film with a metal or alloy film based upon the teachings of equivalence by Holster et al. '553 and to use thinner protective films based upon the teachings of Holster et al. '553.

The applicant points out that the thick substrate materials cause optical aberrations and wavefront distortions in the optical medium. The examiner recognizes this argument, but notes that the 0.6 mm substrates of the prior art described in the instant application are much thicker than the 0.1 mm protective layers of Takeda et al. '609, which also uses the central substrate of the claimed optical recording medium. Thicknesses such as these are not described in the specification as having a deletrious effect on the performance of the medium. Further, the examiner notes that specification does not speak to the thinner protective lacquer taught by Holster et al. '553 (3/15-16 and 11/39-40). The protective lacquer of Holster et al. '553 transmits the light and is therefore held to meet the "coupling" limitation of the claims. The rejection stands.

5. Claims 1-10,12-26,30 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takeda et al. '609, in view of Holster et al. '553, further in view of Wilting et al. '497.

Wilting et al. '497 teach changing the relative placement of the reflective and the partially reflective layers to allow the recording medium to be read either through the top (protective

layer) or through the bottom (substrate), The use of protective coatings of 3-10 microns formed from organic materials or 100-500 nm coatings formed from inorganic materials is disclosed. (7/55-57). The reading from either side is shown in the figures.

In addition to the basis provided above, the examiner cites Wilting et al. '497 to support the position that thin protective layers are known in the optical recording media art and that one of ordinary skill in the art based upon the direction within the figures of Holster et al. '553 would have modified the combination of Takeda et al. '609 and Holster et al. '553 to use protective layers made from UV curable materials as taught by Takeda et al. '609 and Holster et al. '553 in thinner coatings, such as those taught by if Wilting et al. '497 only to save money on UV curable material. Wilting et al. '497 demonstrates that the thick coating are not necessary for the layers to act as protective layers.

This is a new rejection and therefore the response provided above is relied upon.

6. Claims 1-10,12-26,30 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takeda et al. '609, in view of Holster et al. '553, Wilting et al. '497 and Nishiuchi et al. '619.

Nishiuchi et al. '619 teach that the UV curable intermediate layer may be 40 microns thick (13/29-31). The use of phase change recording materials in place of one of the reflective layer is disclosed, including direction to InSb materials. (14/36-61) The read only materials may be dielectrics such as silicon nitride and metals such as gold, aluminum or copper. (13/65-14/6). Examples 4 and 5 (figures 18 and 19) teach the phase change layer as the further of the recording layers and utilize them. Examples 2+ use 680 nm lasers light.

It would have been obvious to one skilled in the art to modify the invention of Takeda et al. '609 as combined with Holster et al. '553, Wilting et al. '497 by replacing the semitransparent

silicon nitride dielectric film with a metal or alloy film based upon the teachings of equivalence by Nishiuchi et al. '619. Further it would have been obvious to one skilled in the art to include a phase change recording layer adjacent to the fully reflective layer to allow the medium to record as well as replay information.

This is a new rejection and therefore the response provided above is relied upon.

7. Claims 1-26,30 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takeda et al. '609, in view of Holster et al. '553, Wilting et al. '497 , Nishiuchi et al. '619 and Pan et al. '680.

Pan et al. '680 teaches that SbInSn have stable state, resistance to corrosion , fast crystallization rates and are able to be recorded at high densities. (3/16-57).

In addition to the basis provided above, the examiner holds that it would have been obvious to modify the invention of Takeda et al. '609 combined with Holster et al. '553, Wilting et al. '497 and Nishiuchi et al. '619 to take advantage of the properties of the InSbSn compositions of Pan et al. '680 with a reasonable expectation of realizing these.

This is a new rejection and therefore the response provided above is relied upon.

8. Claims 1-10,12-26,30,32 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takeda et al. '609, in view of Holster et al. '553 and Wilting et al. '497, further in view of **either of** Nakahara et al. '278, Sugita et al. '494 or Allebest et al. '515.

Nakahara et al. '278 teach optical recording media 40 mm in diameter (8/14-16).

Sugita et al. '494 teach optical recording media 1.9 inches (48.2 mm) in diameter (11/11-14).

Allebest et al. '515 teach optical recording media with 30 mm in diameter substrates (3/65)

It would have been obvious to one skilled in the art to modify the invention of Takeda et al. '609 combined with Holster et al. '553 and Wilting et al. '497 by using different disk substrates known in the art, such as those disclosed by **either of** Nakahara et al. '278, Sugita et al. '494 or Allebest et al. '515 to allow these to be played on these types of players, which are assumably smaller.

This is a new rejection and therefore the response provided above is relied upon.

9. Claims 1-26,30-32 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takeda et al. '609, in view of Holster et al. '553, Wilting et al. '497, Nishiuchi et al. '619 and Pan et al. '680, further in view of **either of** Nakahara et al. '278, Sugita et al. '494 or Allebest et al. '515.

It would have been obvious to one skilled in the art to modify the invention of Takeda et al. '609 combined with Holster et al. '553, Wilting et al. '497,Nishiuchi et al. '619 and Pan et al. '680 by using different disk substrates known in the art, such as those disclosed by **either of** Nakahara et al. '278, Sugita et al. '494 or Allebest et al. '515 to allow these to be played on these type of players, which are assumably smaller.

This is a new rejection and therefore the response provided above is relied upon.

10. Claims 1-26 and 30-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takeda et al. '609, in view of Holster et al. '553, Wilting et al. '497, Nishiuchi et al. '619 and Pan et al. '680, further in view of **either of** Nakahara et al. '278, Sugita et al. '494 or Allebest et al. '515 combined with Gotoh et al. '736 and Mumford et al. WO 99/45539.

Gotoh et al. '736 teaches the provision of a coding area in a PCA sector to allow use of the ROM areas of the CD (31/54-32/27).

Mumford et al. WO 99/45539 teaches the provision of a coding area in a write once band or sector to allow use of the ROM areas of the CD (page 3/second paragraph).

It would have been obvious to one skilled in the art to modify the invention of Takeda et al. '609 combined with Nishiuchi et al. '619, Pan et al. '680 and **either of** Nakahara et al. '278, Sugita et al. '494 or Allebest et al. '515 by encoding information on the discs in the writable areas to prevent pirating as disclosed by Gotoh et al. '736 and Mumford et al. WO 99/45539.

This is a new rejection and therefore the response provided above is relied upon.

11. Claims 1-10,12-26,30 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takeda et al. '609, in view of Holster et al. '553 and Wilting et al. '497, combined with Ueno et al. '457

It would have been obvious to modify the process of using the optical recording media of Takeda et al. '609 combined with **either of** Fujimori et al. '547, Holster et al. '553, Kobayashi et al. '868 or Saito et al. '454 by using differences in reflectivity rather than depth of focus based upon the disclosure of equivalence by Ueno et al. '457.

This is a new rejection and therefore the response provided above is relied upon.

12. Claims 1-26,30 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takeda et al. '609, in view of Holster et al. '553, Wilting et al. '497, Nishiuchi et al. '619 and Pan et al. '680, further in view of Ueno et al. '457

It would have been obvious to modify the process of using the optical recording media of Takeda et al. '609 combined with Nishiuchi et al. '619 and Pan et al. '680 by using differences in

reflectivity rather than depth of focus based upon the disclosure of equivalence by Ueno et al. '457

13. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Martin J Angebranndt whose telephone number is 703-308-4397. The examiner can normally be reached on Mondays-Thursday and alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Huff can be reached on 703-308-2464. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703/308-0661.

Martin J Angebranndt
Primary Examiner
Art Unit 1756

September 2, 2003